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Rhododendron Leaf Spot and Stem Dieback Caused by *Phytophthora syringae*

That *Phytophthora syringae*, a cool temperature fungus not previously reported on rhododendrons or other evergreen landscape plants, causes both a leaf spot and stem or branch canker on rhododendron has been confirmed by Dr. R. G. Linderman, USDA Horticultural Crops Research Laboratory, CorvA11is, Oregon. This disease occurs primarily during the rainy and cold winter-spring months. Occasionally, stem die-back symptoms may occur in the summer months.

The leaf spot caused by *Phytophthora syringae* is an irregular necrotic spot, often on the edge or tip of the leaf. It is difficult to distinguish this leaf spot symptom from similar leaf scorch or spot symptoms caused by water stress or chemical damage. However, **plants infected by *Phytophthora syringae* frequently defoliate, and if the leaf petiole itself was infected, the leaf scar will be slightly discolored -purple to black.**

The branch canker caused by *Phytophthora syringae* can be distinguished from that caused by *Phytophthora cactorum* primarily on the basis of color: *P. cactorum* causes a **brown**, sunken lesion; *P. syringae* causes a **shiny black lesion** that is not sunken. The lesion caused by *P. syringae* may be on only one side or may go all the way around the branch; it may be a surface lesion or extend deep into the woody tissues.

The most typical symptom pattern is development, during the winter months, of black necrosis extending from the branch tip down several inches (including bud necrosis) accompanied by defoliation of that shoot. In the spring, when new buds form below the canker and break, the new shoots may surround and conceal the killed terminal bud and shoot within the healthy canopy.

The most severe symptoms are totally defoliated plants with all terminal buds and subtending shoots killed back several inches. Adventitious buds below the dead areas may develop into new shoots in the spring. Dieback and defoliation may be so severe that the plants die.

Attempts to infect actively growing rhododendrons failed. Infection was obtained on dormant rhododendrons maintained under cold conditions (4°C) by wound inoculations of branches and buds. *Phytophthora syringae* infection in the field begins when splashed or windborne inoculum lands on stems or leaves covered with free water. From the disease lesions, inoculum develops in pools of water on the leaf/stem surfaces for dispersal from the infected tissues: **Fallen leaves are**

a probable means of long term survival of the pathogen as well as a source of seasonal inoculum.

Control: Sanitation and chemical applications are use in controlling *Phytophthora syringae* infection of rhododendron. Sanitation consists of removing infected branches, shoots and leaves. It is especially important to remove infected leaves from propagation cuttings. Likewise, fallen leaves which could provide inoculum during the current and successive seasons should be removed from all production and holding areas.

Chemical sprays during the dormant season are effective in slowing down the rate of spread of the pathogen. They should be applied as late in the growing season as possible to maximize their residual effect during the dormant period. Systemic chemicals, such as metalaxyl, applied as a foliar spray or drenched around the base of the plants reduced the spread from infected, older plants to young, smaller plants interspaced between the larger plants. Other foliar-applied chemicals such as copper sprays may also be effective if applied with a good sticker to maximize their longevity during long rainy periods.

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